



### **RULE 132 AFFIDAVIT**

Applicant : 10/757,382

Filed: 01/14/2004

For: HIGHWAY GUARDRAIL SUPPORT MADE FROM TIRES

Examiner: Addie, Raymond W.

Group Art Number: 3671

Name of First Inventor: Behzad Kasraie

### **DECLARATION UNDER 37 C.F.R. 1.132**

I, Behzad Kasraie, declare and state:

That I am a citizen of the United States.

That I am the inventor of the invention that is the subject matter of the patent application.

That I am over the age of eighteen (18) and I have personal knowledge concerning my testimony.

I graduated in engineering from West Virginia University with a Ph. D. degree in Mechanical Engineering and Mechanics. I also graduated in engineering from West Virginia University with a Master degree in Theoretical and Applied Mechanics. I also graduated in engineering from Tehran Polytechnic Institute located in Tehran with a Master degree in Mechanical Engineering. I have been working in the engineering field for more than 25 years. I am a Registered Professional Engineer in the State of Pennsylvania. I have been author and co-author of more than 25 published technical papers.

My invention disclosed in the patent application and claimed will have commercial success, in my opinion, because the Federal Highway Administration has approved it for a support to highway guardrails throughout the National Highways System (NHS) in the United States. Therefore, my invention, the highway guardrail

support made from recycled tires, should sell in large quantities because its use would be incorporated into the National Highways System.

The acceptance for using of my invention for supporting highway guardrails throughout the National Highways System in the United States, based on the required Pendulum Test performed by Safety Quest, Inc. in College Station, Texas (copy attached), is stated in the letter from (copy attached):

Fredrick G. Write, Jr.,  
Program Manager, Safety  
Geometric and Roadside Design Br.  
Federal High Way Administration, HNG-14  
400 Seventh Street, SW, RM3134  
Washington, D.C. 20590

It is my belief that the present invention satisfies a long felt need in the industry in that, at present, a wooden block is used as a support for the guardrail in the federal highway system, and when the wooden blocks are changed, due rot and safety issues, my invention, the highway guardrail support made from tires, provides a much safer guardrail support system, because of its grater flexibility and energy absorbency in comparison with wooden block. It is environmentally friendly since it is made of totally recycled material. In addition, it provides a longer life, a more stable, water resistant, and much more economical than the wooden block.

My invention's dimensions and specific hole diameter and location have been designed to meet the current Federal Highway Administration's guidelines for highway guardrail support, and it is superior, because of such design, over the prior art, including the wooden blocks and patents cited by the Examiner.

That, in my opinion, the aforementioned commercial success, satisfaction of a long felt need, and superiority over the prior art with respect to my invention is not obvious to a person skilled in the art of providing highway guardrail supports because: (a) the combination of all the elements I have made and disclosed in my patent application is different than what has been done before; (b) my invention is designed, by the specific dimensions, hole diameter and location, and constitution of materials so as to specifically be used for a better way to support a highway guardrail than what is currently on the market; and (c) such combination is not obvious to one skilled in this particular art.

That the undersigned declares further that all statements made herein are of his own knowledge and that all statements made on information and belief are believed to be true; and, further, that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patents issuing thereon.

Further declarant saith not.

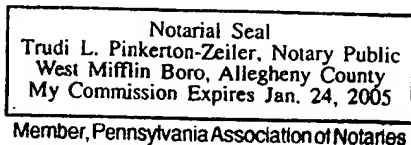
  
Signature

Behzad Kasraie

SWORN TO AND SUBSCRIBED before me  
this 11 day of OCTOBER, 2004.

NOTARY PUBLIC, ~~GEORGIA, STATE AT LARGE~~

My Commission Expires: 11/24/05.



August 14, 2001

Refer to: HAS-10/B89

Mr. Bijan Kasraie  
Consolidated Tire Corporation  
1430 W. Peachtree St., NE Suite 705  
Atlanta, GA 30309

Dear Mr. Kasraie:

Late last year, Dr. Dean Alberson sent me information on some pendulum testing he had done on offset blocks produced by your company. These blocks are made from multiple plies of recycled tire tread laminated together through a patented process and intended for use with strong post, w-beam guardrail. Pendulum testing consisted of swinging an 820-kg pendulum through a vertical drop of 4 m into a fixed steel guardrail post with a short section of W-beam and your blocks attached. The posts failed at ground line and the blocks remained intact. However, because the blocks did not have a routing on the back face as did similar products, Dr. Alberson was advised that crash testing would be needed to verify the expected field performance of your block. Alternatively, he was told that if routing was added to the existing product, full-scale testing would not be mandatory.

Mr. Richard Powers of my staff recently received Dr. Alberson's July 19 letter that included a revised drawing with a route incorporated into the design and with dimensions that conform more closely to previously tested and/or accepted blocks. Please note, however, that - without full scale testing - the minimum depth of the block must be 150 mm rather than the 132 mm shown in the enclosed drawing (Enclosure 1). A block 200-mm deep would also be acceptable and is likely to perform better in service.

Based on the results of the pendulum tests run, your product may be considered acceptable for use on the National Highway System (NHS) when it conforms to the dimensions shown on Enclosure 1 (as modified above) and is composed of the same materials as the tested blocks. As with all other recycled blocks accepted for use on the NHS, FHWA acceptance is based solely on the reported impact performance in the pendulum test and is not intended to address the long-term performance or durability of the product. Since your block is the first laminated design we have seen, the effects of weathering in particular should be carefully monitored on initial field installations.

Since your block is a proprietary product, its use on Federal-aid projects, except exempt, non-NHS projects, is subject to the conditions listed in Title 23, Code of

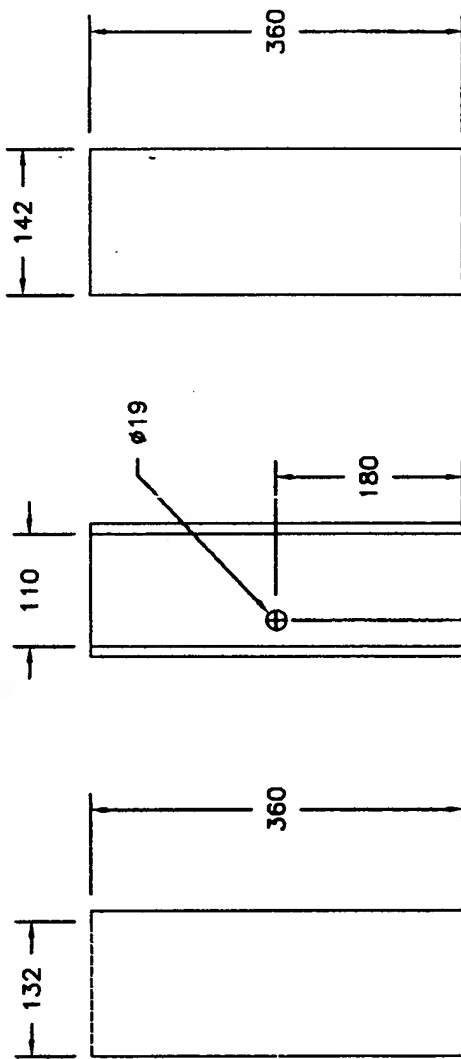
**Federal Regulations, Section 635.411, a copy of which is enclosed for your ready reference. If you have any questions, please call Mr. Powers at (202) 366-1320.**

**Sincerely yours,**

**(original signed by Frederick G. Wright, Jr.)**

**Frederick G. Wright, Jr.  
Program Manager, Safety**

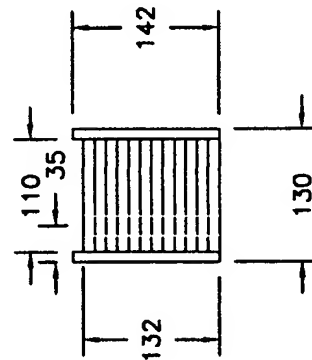
**2 Enclosures**



OUTSIDE PIECE

FRONT

RIGHT SIDE



|   |                                |
|---|--------------------------------|
| Mr. Brian Kasale<br>Consolidated Tire Corporation<br>1430 W. Peachtree St., NE Suite 705<br>Atlanta, GA 30309 |                                |
| TITLE   | PENDULUM TEST<br>TIRE BLOCKOUT |
| SHEET   | 1 OF 1                         |
| FORMING, INC.   |                                |

Sec. 635.411 Material or product selection.

(a) Federal funds shall not participate, directly or indirectly, in payment for any premium or royalty on any patented or proprietary material, specification, or process specifically set forth in the plans and specifications for a project, unless:

(1) Such patented or proprietary item is purchased or obtained through competitive bidding with equally suitable unpatented items; or

(2) The State highway agency certifies either that such patented or proprietary item is essential for synchronization with existing highway facilities, or that no equally suitable alternate exists; or

(3) Such patented or proprietary item is used for research or for a distinctive type of construction on relatively short sections of road for experimental purposes.

(b) When there is available for purchase more than one nonpatented, nonproprietary material, semifinished or finished article or product that will fulfill the requirements for an item of work of a project and these available materials or products are judged to be of satisfactory quality and equally acceptable on the basis of engineering analysis and the anticipated prices for the related item(s) of work are estimated to be approximately the same, the PS&E for the project shall either contain or include by reference the specifications for each such material or product that is considered acceptable for incorporation in the work. If the State highway agency wishes to substitute some other acceptable material or product for the material or product designated by the successful bidder or bid as the lowest alternate, and such substitution results in an increase in costs, there will not be Federal-aid participation in any increase in costs.

(c) A State highway agency may require a specific material or product when there are other acceptable materials and products, when such specific choice is approved by the Division Administrator as being in the public interest. When the Division Administrator's approval is not obtained, the item will be nonparticipating unless bidding procedures are used that establish the unit price of each acceptable alternative. In this case Federal-aid participation will be based on the lowest price so established.

(d) Appendix A sets forth the FHWA requirements regarding (1) the specification of alternative types of culvert pipes, and (2) the number and types of such alternatives which must be set forth in the specifications for various types of drainage installations.

(e) Reference in specifications and on plans to single trade name materials will not be approved on Federal-aid contracts.

ENCLOSURE 2

## Safety Quest, Inc.

21 Ranchero Rd.  
College Station, Texas 77845

Telephone: (979) 731-8081  
Fax: (979) 716-9944

September 5, 2000

Mr. Richard Powers  
Roadside Design Section  
Geometric and Roadside Design Br.  
FHWA, HNG-14  
400 Seventh Street, SW, RM3134  
Washington, D.C. 20590

RE: Consolidated Tire Corporation Recycled Tire Blockout

Dear Mr. Powers:

We have completed pendulum testing of the Consolidated Tire Corporation Block-out. Photographs and video of the testing are enclosed for your review. Consolidated Tire Corporation is seeking a letter of acceptance of their product for use on the National Highway System.

The pendulum weighed approximately 1800 lbs (820 kg) and was elevated just over 13 ft (4 m) to give an impact velocity of approximately 20 mph (32 km/h). W-beam backup plates were bolted to the block-out and post using standard A307 5/8" (16mm) diameter bolts. The posts were pulled from a local suppliers inventory and were W6x9 bridge deck mounted posts. We selected rigidly mounted posts to remove soil condition factors. The posts were bolted to a 1" (25 mm) thick plate that was attached at the four corners by 3/4 (19 mm) inch bolts anchored into concrete piers.

Drawings provided by Consolidated Tire Corporation are enclosed for your review. Two different block-outs were tested. The block-out used in the first test was the lightest weighing 16 lbs (7.3 kg). As can be seen in the photographs and video, the post buckled just above the base plate and there was only minor cosmetic damage to the block-out. The second block-out had an increased cross-section as shown in the attached drawing, and it weighed 20 lbs (9.1 kg). The block-outs are fabricated from multiple plies of tire tread sections. The increased depth in the second test was achieved by adding plies that were not affixed to adjacent plies. As can be seen in the photographs and video, the post again buckled just above the base plate. Therefore, from an impact standpoint, the block-outs are superior to the posts that have been accepted for use on the Federal Highway System in the G4-1S guardrail system. The plies that were not affixed to the adjacent plies separated upon impact. Future block-outs will be fully affixed to accomplish the two sizes tested.

The block-outs are fabricated from multiple plies of tire tread sections that have been attached through a patented process. The product is 100% fabricated from recycled tires.

If we need to provide additional information please contact me at (979) 731-8081 or Mr. Bijan Kasraie of Consolidated Tire Corporation at (404) 885-7880. If this information is adequate for FHWA acceptance of this product for use on the National Highway System, please address the acceptance letter to:



Page 2

Mr. Dick Powers  
September 5, 2000

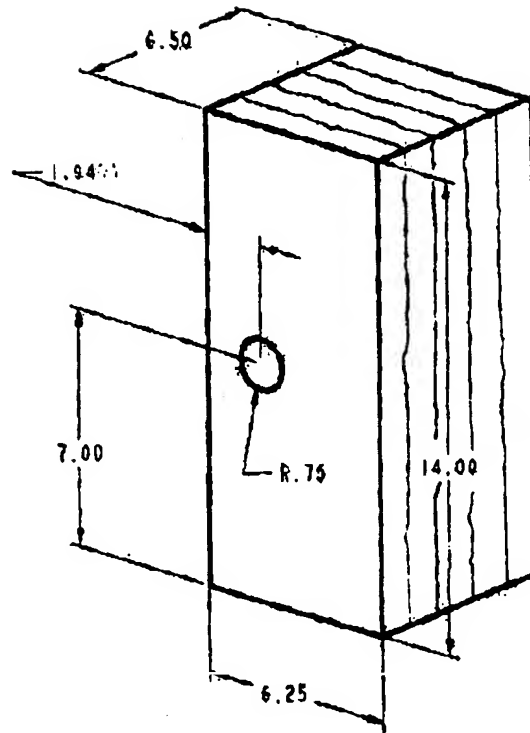
Mr. Bijan Kasraie  
Consolidated Tire Corporation  
1430 W. Peachtree St., NE Suite 705  
Atlanta, GA 30309

Thank you for your time in this matter.

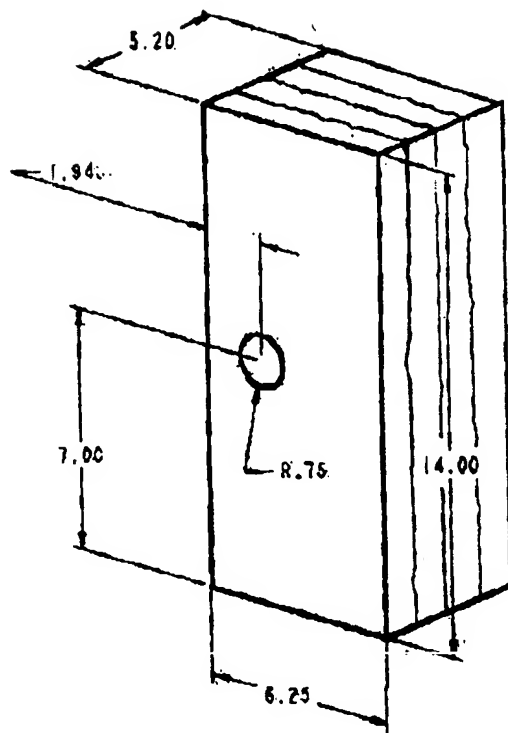
Sincerely,

Dean C. Alberson, Ph.D., P.E.

Enclosures  
cc: B. Kasraie (404) 885-7888 fax



Akamite Block-out Test Number: 2  
Dimensions: 6.50 X 6.25 X 14 Inches  
Weight : 20 lbs



Akamite Block-out Test Number: 1  
Dimensions: 5.20 X 6.25 X 14 Inches  
Weight : 16 lbs